Laboratory Safety

Duke University Institutional Biosafety Committee (IBC) Viral Vector Policy February, 2001

The following table shows the prescribed precautions for working with three commonly used vectors. Understand that the precautions outlined below are the minimal requirements for working with each agent. Those systems, which express genes that expand the host range of the vector, or increase the hazard of the virus beyond wild-type, may necessitate higher containment practices and facilities.

Viral Vector	Hazard(s)	Level; Animal Biosafety Level	Additional Precautions	Animal Handling (DLAR approval required)	Waste Issues	Spills,(Wearing PPE): see Emergency Response Guide
Adenovirus	aerosol, injection	elements that alter host range, immune suppressors, etc.	preferred; Cuffed lab gown/gloves; OESO approved lab audit; SOPs developed and available;	replication competence before injection of animals. SOPs developed and available for animal handling. Special handling of bedding and cages for 48 hours post	specimens in a secondary, sealed container; All waste autoclaved or incinerated by laboratory staff familiar with precautions	Alert people in immediate area of spill; Allow aerosols to settle; absorb spill with paper towel/lab diaper; expose to 10% bleach for 20-30 minutes; Use paper towels to wipe up spill; Clean spill area with towels soaked in 10% bleach; Place towels in autoclave bag and decontaminate in autoclave. Notify Biological Safety

Vaccinia	Aerosol,	BSL-2;	All work	Special	Transport	Alert people in
	droplet,		done in BSC;			immediate area
	injection		ĺ		a secondary,	
		Special	Negative	cages post	sealed	
		considerations		injection of	container;	Allow aerosols
		for	preferred;	animals;		to settle;
		transgenes,	ľ	SOPs developed	All waste	,
		ex., toxins,	Cuffed lab	and available	autoclaved	absorb spill
		oncogenes,	gown/gloves;	for animal	or	with paper
			OESO	handling.	incinerated	towel/lab
		alter host	approved lab		by	diaper;
		range,	audit;		laboratory	
		immune	SOPs	bedding and	staff familiar	expose to 10%
			developed		with	bleach for 20-30
			and		precautions	minutes;
			available;	0	and who	
		MVA strains		decontaminating bedding or	1 4 1 1	Use paper
		encouraged	Biohaz sign	cages must	Occupational	towels to wipe
		for use.	on door with	consult with	Medicine	up spill;
			agent		Physician for	
			specified;	Medicine	vaccination	Clean spill area
			Consult with	Physician for a	, accination	with fresh
			Occupational	medical		towels soaked
			Medicine	evaluation		in 10% bleach;
			physician for a medical	regarding		
			evaluation	vaccination.		Place towels in
			regarding	Incineration or		autoclave bag
			L	autoclaving of		and
			(Note: use of	bedding;		decontaminate
			MVA strains			in autoclave.
			does not	carcasses;		
			require			Notify
			vaccination)	DLAR assigned		Biological
			<u> </u>	signage on		Safety
				cages and		
				doors;		
				Housing		
				approved by		
				DLAR.		

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Retrovirus	Injection,		Sharps	Work with	Transport	Alert people in immediate area of
	splash to	ABSL-2			specimens in	spill;
	face				a secondary,	Allow aerosols to
			Full face		sealed	settle;
		considerations	protection if	replication	container;	absorb spill with
		for	working	competence		paper towel/lab
		transgenes,	outside BSC;	before injection	All waste	diaper;
		ex., toxins,		C · 1	autoclaved	expose to 10%
		oncogenes,	OESO		or	bleach for 20-30
				Incineration or	incinerated	minutes;
			audit;	autoclaving of	by	Use paper towels
			SOPs	bedding;	laboratory	to wipe up spill;
		range, immune	developed	bedding,	staff familiar	Clean spill area
			and		with	with fiesh towers
		F F		incinciation of		soaked in 10%
		etc.	available;	carcasses;	precautions	bleach;
			Biohaz sign			Place towels in
Lentiviruses			on door with	DLAR assigned		autoclave bag and decontaminate in
			ageme	signage on		autoclave.
		BSL-2	specified;	cages and		Notify Biological
		facilities;		doors;		Safety
		BSL-3 work	All work			
		practices;	with	Housing		
		practices,	lentivirues	approved by		
		ADGL A	must be done	DLAR.		
		ABSL-2	in a BSC	DLAK.		
		facilities;				
		ABSL-3 work				
		practices				
Other viral		Use	Use	Use Minimum	Use	
vectors			Minimum	requirements for		
Ex.,			requirements		requirements	
Baculovirus,			for		for	
Adenoassociated		Adenovirus.	Adenovirus.		Adenovirus.	
virus, Simliki						

Abbreviations:

DLAR: Division of Laboratory Animal Resources **PPE:** Personal Protective Equipment **BSC:** Biological Safety Cabinet **OESO:** Occupational and Environmental Safety Office